IN THE CLAIMS

1. (Currently Amended) A detector ~~(100; 200; 300; 400; 500; 600; 700; 800; 900)~~ for detecting electromagnetic radiation, comprising a semiconductor or a semiconductor junction formed by a substrate ~~(110; 310; 410; 510; 610)~~ and a layer ~~(120; 320; 420; 520; 620)~~ arranged on said substrate ~~(110; 310; 410; 510; 610)~~, a first electrode ~~(130; 230; 330; 430; 530; 630; 730; 830; 930)~~ having a first end ~~(131; 231; 331; 431; 531; 631)~~ and a second end ~~(132; 232; 332; 432; 532; 632)~~ arranged as an output end, and a second electrode ~~(140; 240; 340; 440; 540; 640; 740; 840; 940)~~ adjacent to said first electrode ~~(130; 230; 330; 430; 530; 630; 730; 830; 930)~~, said electrodes ~~(130; 230; 330; 430; 530; 630; 730; 830; 930; 140; 240; 340; 440; 540; 640; 740; 840; 940)~~ being arranged on the layer ~~(120; 320; 420; 520; 620)~~, and separated by an exposed area ~~(160; 260; 360; 460; 560; 660; 760; 860; 960)~~ of said layer ~~(120; 320; 420; 520; 620)~~ arranged to receive electromagnetic radiation ~~(150; 250; 350; 450; 550; 750; 850; 950)~~, where received radiation ~~(150; 250; 350; 450; 550; 750; 850; 950)~~ is transformed by said semiconductor junction and said electrodes ~~(130; 230; 330; 430; 530; 630; 730; 830; 930; 140; 240; 340; 440; 540; 640; 740; 840; 940)~~ to a travelling microwave propagating towards the output end ~~(132; 232; 332; 432; 532; 632)~~,
~~*characterised in that*~~*wherein*:
said electrodes ~~(130; 230; 330; 430; 530; 630; 730; 830; 930; 140; 240; 340; 440; 540; 640; 740; 840; 940)~~ are arranged essentially parallel to the surface of said substrate ~~(110; 310; 410; 510; 610)~~ for receiving radiation ~~(150; 250; 350; 450; 550; 750; 850; 950)~~ having an angle of incident with respect to the surface of said substrate ~~(110; 310; 410; 510; 610)~~, and a tapered structure ~~(130; 230; 330; 430; 530; 630; 730; 830; 930; 470; 570; 670; 970)~~ is arranged on the substrate ~~(110; 310; 410; 510; 610)~~ so as to slow down a signal received from said radiation ~~(150; 250; 350; 450; 550; 750; 850; 950)~~ at a given cross section of said first electrode ~~(130; 230; 330; 430; 530; 630; 730; 830; 930)~~, compared to signals received at any preceding cross section of said first electrode ~~(130; 230; 330; 430; 530; 630; 730; 830; 930)~~ more distant from the output ~~(132; 232; 332; 432; 532; 632)~~ of the first electrode ~~(130; 230; 330; 430; 530; 630; 730; 830; 930)~~, so that the phase difference between said received signals is reduced or

eliminated at the output~~(132; 232; 332; 432; 532; 632)~~.

2. (Currently Amended) A detector ~~(100; 200; 300; 600; 700; 800; 900)~~ according to claim 1 ~~*characterised in that*~~*wherein*:
a tapered structure is formed by tapering said first electrode ~~(130; 230; 330; 630; 730; 830; 930)~~ to reduce the phase velocity of a signal received from said travelling wave at a given cross section of the tapered electrode ~~(130; 230; 330; 630; 730; 830; 930)~~, compared to the phase velocity of signals received at any preceding cross section of said tapered electrode ~~(130; 230; 330; 630; 730; 830; 930)~~ more distant from the output ~~(132; 232; 332; 632)~~ of said tapered electrode ~~(130; 230; 330; 630; 730; 830; 930)~~, so that the phase difference between said signals received from said travelling wave by said tapered electrode ~~(130; 230; 330; 630; 730; 830; 930)~~ is reduced or eliminated at said output ~~(132; 232; 332; 632)~~.

3. (Currently Amended) A detector ~~(100; 200; 400; 500)~~ according to claims 1~~–2~~ ~~*characterised in that*~~*wherein*:
said second electrode ~~(140; 240; 440; 540)~~ has an elongated *opening* into which at least one first electrode ~~(130; 230; 430; 530)~~ extends, where the area between said electrodes ~~(130;230; 430; 530; 140; 240; 440; 540)~~ is occupied with an exposed area ~~(160; 260; 460; 560)~~ of the layer ~~(120; 320; 420; 520)~~.

4. (Currently Amended) A detector ~~(300; 600)~~ according to claim 2 ~~*characterised in that*~~*wherein*:
said second electrode ~~(340; 640)~~ is tapered.

5. (Currently Amended) A detector ~~(300; 600)~~ according to claim 4 ~~*characterised in that*~~*wherein*:
said first electrode ~~(330; 630)~~ and said second electrode ~~(340; 640)~~ are separated and substantially surrounded by an exposed area ~~(360; 660)~~ of the layer ~~(320; 620)~~.

6. (Currently Amended) A detector ~~(100; 200; 300; 400; 500; 600; 700; 800; 900)~~ according to claims 2–~~5~~

~~*characterised in that*~~*wherein*:

said tapering is one of a triangular, stepwise or trapezium shape, where said shape can have chamfered or rounded parts/sections.

7. (Currently Amended) A detector ~~(700; 800; 900)~~ according to claims 1~~, 2 and 6~~

~~*characterised in that*~~*wherein*:

several first electrodes ~~(730; 830; 930)~~ are arranged in a substantially symmetrical pattern around a centre ~~(791; 891; 991; 892; 992)~~ so as to cancel or reduce noise detected by the electrodes ~~(730; 830; 930)~~, where at least one second electrode ~~(740; 840; 940)~~ is arranged between every two first electrodes ~~(730; 830; 930)~~, and an exposed area ~~(760; 860; 960)~~ of said layer is arranged between said electrodes ~~(730; 830; 930; 740; 840; 940)~~.

8. (Currently Amended) A detector ~~(100; 200; 300; 400; 500; 600; 700; 800; 900)~~ according to claim 1–~~7~~

~~*characterised in that*~~*wherein*:

said substrate ~~(110; 310; 410; 510; 610)~~, layer ~~(120; 320; 420; 520; 620)~~ and electrodes ~~(130; 230; 330; 430; 530; 630; 730; 830; 930; 140; 240; 340; 440; 540; 640; 740; 840; 940)~~ are arranged as a coplanar structure.

9. (Currently Amended) A detector ~~(100; 200; 300; 400; 500; 600)~~ according to claim 1–~~8~~

~~*characterised in that*~~*wherein*:

said layer ~~(120; 320; 420; 520; 620)~~ is a photosensitive layer.

10. (Currently Amended) A detector ~~(400; 500; 600; 900)~~ according to claim 1~~-9~~ ~~*characterised in that*~~*wherein*:

a tapered structure is formed by a tapered delay network ~~(470; 570; 670; 970)~~ arranged on said electrodes ~~(430; 530; 630; 930; 440; 540; 640; 940)~~ to delay the arrival of the received radiation ~~(450; 550; 950)~~ at a given cross section of said first electrode ~~(430; 530; 630; 930)~~, compared to the arrival at any preceding cross section of said first electrode ~~(430; 530; 630; 930)~~ more distant from the output ~~(432; 532; 632)~~ of said first electrode ~~(430; 530; 630; 930)~~, so that the phase difference between the signals received by the first electrode ~~(430; 530; 630; 930)~~ from said radiation ~~(450; 550; 950)~~ is reduced or eliminated at the output ~~(432; 532; 632)~~.

11. (Currently Amended) A detector ~~(400; 500; 600; 900)~~ according to claim 10 ~~*characterised in that*~~*wherein*:

said tapered delay network ~~(470; 570; 670; 970)~~ is transparent or semitransparent for the incident radiation wave ~~(450; 550; 950)~~.

12. (Currently Amended) A detector ~~(400; 500; 600; 900)~~ according to claim 10 ~~*characterised in that*~~*wherein*:

said tapered delay network ~~(470; 570; 670; 970)~~ is made of a substance that is transparent to the received radiation ~~(450; 550; 950)~~.

13. (Currently Amended) A detector ~~(400; 500; 600; 900)~~ according to claim 10 ~~*characterised in that*~~*wherein*:

said tapering is one of a triangular, stair-like, stepwise or trapezium shape, where said shape can have chamfered or rounded parts/sections.

14. (Currently Amended) A detector ~~(400; 500; 600; 900)~~ according to claim 10 ~~*characterised in that*~~*wherein*:

said tapering of the delay network ~~(470; 570; 670; 970)~~ has a phase matching condition for each step given as:

$$\Delta y_{i+1} = \Delta t_{ewi} V_o = \frac{c_o}{n} \Delta t_{ewi} .$$

15. (Currently Amended) A receiver, a transmitter or a transceiver comprising
a detector ~~(100; 200; 300; 400; 500; 600; 700; 800; 900)~~ according to ~~any preceding claim~~claim 1.